



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,442	08/19/2003	Judith A. Barnes	107044-0019U	4416
24267	7590	05/02/2006		
CESARI AND MCKENNA, LLP 88 BLACK FALCON AVENUE BOSTON, MA 02210				
			EXAMINER RUTLAND WALLIS, MICHAEL	
			ART UNIT 2835	PAPER NUMBER

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/643,442

Applicant(s)

BARNES ET AL.

Examiner

Michael Rutland-Wallis

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 3 and 10 is/are allowed.
- 6) ☐ Claim(s) 4-9, 11 and 13-20 is/are rejected.
- 7) ☐ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Arguments***

In view of applicant's amendments to the specification the previous objection to the specification is hereby withdrawn.

In view of applicant's replacement drawings the previous objection to the drawings is hereby withdrawn.

Applicant's arguments filed March 14, 2006 have been fully considered but they are not persuasive.

With respect to claims 1 and 2-7 applicants allege Dailey does not teach a "controllable switching device to select between said plurality of power sources to provide operating power to said application device..." The office contends Dailey teaches such a controllable switch. As applicant points out on page of the remarks claim 1 recites, "A method for charging and maintaining the operation of a battery powered device..." which is the operation of Dailey further the switch of Dailey switches between a primary "fuel" source of an AC line voltage and detailed plurality of auxiliary sources such as batteries and fuel cells. Therefore the rejection is proper.

Applicant's arguments of the rejection claims 8-20 are similar to that claim 1 where applicant alleges Christensen in view of Colborn fail to teach "a switching device coupled to a microprocessor to select between said plurality of power sources depending on predetermined conditions..." Colborn teaches a controller item 13 and

Art Unit: 2835

170 for controlling such an operation to select the supply to power the load based on conditions of the load see for example column 5 line 57 – column 6 lines 6 and column 10 lines 20 – 45 where the supply switching is described by Colburn

Applicant also provides arguments to the complexity of the cited art. While the office does not concede a significant difference in complexity is present as all the limitations of applicant's system and method have been shown or rendered obvious in the prior art rejections below, a discussion of the complexity of applicant's invention to the cited art is insufficient to overcome the prior art rejections.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the examiner as to what applicant intends by the limitation ports for producing signals. While a port is generally used to input and or output signals and not used in the production of signals. It is therefore suggested to amend at least the limitation "production" to the limitation "output" or to the limitation "input". Further if this is indeed the case sufficient voltage conversion circuitry is required in order to properly enable the limitation of varying potential outputs. It is believed applicant has described item 140 a power combiner/conditioner (see page 10

Art Unit: 2835

lines 21-30 of the specification) to provide this function to vary outputs, however this does not appear in the claim language or the language of the parent claim. It is suggested this limitation (power combiner/conditioner) be added in order to clearly claim applicant's invention.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The term *application device* is used throughout the specification and in the claims while its definition maybe inferred in first two paragraphs of the specification it is not expressly defined, for clarity and in order to examine the merits of the application the examiner of record understands an application device to be any battery powered electronic device.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dailey (U.S. Pat. No. 6,680,547) in view of Christensen (U.S. Pat. No. 6,703,722) Dailey teaches a method for charging and maintaining the operation of a battery-powered electronic application device (electrical loads item 30 which may be battery powered by battery item 20), including the steps of: providing a controllable switching device (a

Art Unit: 2835

switch item 34); providing a plurality of power sources (AC line voltage item 100, rechargeable battery item 20, fuel cell see Fig. 1, DC source i.e., solar) each coupled to said application device via said controllable switching device, said plurality of power sources including an AC power source (item 100) and a DC power source (item 20); and switching said controllable switching device (item 34) to select between said plurality of power sources to provide operating power to said application device or to charge said rechargeable battery. Dailey does not teach the fuel cell is a direct oxidation fuel cell. Christensen teach a direct oxidation fuel cell. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dailey to use a direct oxidation fuel cell provide power to the application device.

With respect to claim 4 Dailey teaches a system wherein the primary power source is an AC line voltage however in column 3 lines 5-9. Dailey teaches the variant of a primary DC line voltage in the place of the AC line voltage could also be used. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the input of the primary power source DC in order to operate the system when a DC power line is present in the place of an AC power line.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dailey (U.S. Pat. No. 6,680,547) in view of Bliven (U.S. Pub. No. 20040175598) Dailey teaches a system wherein the primary power source is an AC line voltage. Dailey does not teach using the fuel cell as the primary power source. Bliven teaches a method for powering an application device where the primary source is a fuel cell. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the input of

Art Unit: 2835

the primary power source the fuel cell in order to operate the system when there is not a reliable AC or DC power line for the device to connect to.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dailey (U.S. Pat. No. 6,680,547) in view of Holmes (U.S. Pat. No. 6,806,678). Dailey teaches a system wherein the primary power source is an AC line voltage. Dailey does not teach using the rechargeable battery as the primary power source. Holmes teaches method where a bank of rechargeable batteries is used as the primary power source see figure 4. It would have been obvious to one of ordinary skill in the art at the time of the invention to make the input of the primary power source the rechargeable battery cell in order to operate the system when there is not a reliable AC or DC power line for the device to connect to.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dailey (U.S. Pat. No. 6,680,547) in view of Parks et al. (U.S. Pat. No. 6,504,339). Dailey teaches the battery is charged by the battery charger (item 18A). Dailey is silent on the operation and details of the charger and simply states charger/inverter circuits are well known in the art and hence do not need to be described in detail. While it is believed by the examiner the operation of the device of claim 7 is that of the charger/inverter of Dailey, however if applicant holds this is not the operation of the Dailey. Park teaches a system where the battery charger circuit includes a monitoring circuit to determine if a charge is necessary see column 3 lines 10-33. It would have been obvious to one of ordinary skill in the art at the time of the invention to determine if the battery is need to

Art Unit: 2835

be charged in order to not waste energy attempting to charge a fully charged battery to increase the efficiency of the system and reduce electrical power waste.

Claims 8-9, 11, 13-14 16, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen (U.S. Pat. No. 6,703,722) in view of Colborn et al. (U.S. Pat. No. 6,787,259).

With respect to claim 8 Christensen an input adaptable to receive power from a DC power source (item 150); a direct oxidation fuel cell system (item 120); a means by which said system may be electrically connected to said electronic application device (connecting wires 186); a switching device (item 182) connected, said DC input and said fuel cell wherein said switching device is operable to select between a first state in which current flows through said switching device from said AC input, a second state in which current flows from said DC input and a third state in which current is drawn from said fuel cell system; and a microprocessor (items 13 and 170) coupled to said switching device and programmed to select between said AC power source, said DC power source and said fuel cell system, depending upon predetermined conditions.

Christensen does not teach an input for receiving AC power from an external source

Colborn teaches a similar system which has an input for receiving AC external power

Colborn also teaches a fuel cell being direct oxidation (column 3 lines 10-20) and

Colborn also teaches the use of a battery which is rechargeable. It would have been

obvious to one of ordinary skill in the art at the time of the invention to modify

Christensen to include a input for receiving AC power as seen in Colborn in order allow

the device to be plugged into wall socket better assure continuous power.



With respect to claim 9 Christensen teaches the use of a rechargeable battery (item 141) but not it being connected to the input of the said DC source, said input from AC power source and with said fuel cell system. Christensen also teaches the microprocessor being programmed to select the rechargeable battery to power the application device if the other sources are not available (column 3 lines 20-33). Colborn teaches connecting the battery being connected to the input of the AC input and fuel cell as well as a system controller to oversee the operation of the sources and control the switching functions of the device. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Christensen to use the connection of Colborn in order to use the battery to smooth the output voltage in order to reduce harm to the device in the case of power surges.

With respect to claim 11 Christensen teaches an embodiment of his system, which includes the use of a power combiner and conditioner (item 201), which is adapted to perform signal processing and signal conditioning to the power source selected by said microprocessor such that the power signal is compatible with the specifications of the application device.

With respect to claim 13 Christensen teaches a system for powering and maintaining the operation of a battery see in figure 1. An input (connecting terminals 183) for receiving an external DC power source (item 150 other DC source such as solar); a direct oxidation fuel cell system (item 120); a rechargeable battery (item 141); a switching device (item 182) operable to select between, said DC power source, said fuel cell system and said rechargeable battery such that power is continuously applied to

Art Unit: 2835

said battery powered electronic application device and a microprocessor (items 13 and 170) coupled to said switching device and programmed to select between said AC power source, said DC power source and said fuel cell system, depending upon predetermined conditions. While Christensen does not teach an input for receiving AC power from an external source Colborn teaches a similar system which has an input for receiving AC external power Colborn also teaches a fuel cell being direct oxidation (column 3 lines 10-20) and Colborn also teaches the use of a battery which is rechargeable. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Christensen to include a input for receiving AC power as seen in Colborn in order allow the device to be plugged into wall socket better assure continuous power.

With respect to claim 14 Christensen's system provides power to the load but does not teach this is done while the battery is being recharged. Colborn teaches the battery item 32 supplies current to the load while it is being recharged. In figure 2 the battery is seen as supplying current to the load and when there is an excess of power the battery may be charged as well. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Christensen's system to charge the battery while supplying power to the system

With respect to claim 16 Christensen teaches a power supply system for powering and maintaining the operation of a battery powered application device see in figure 1. An input (connecting terminals 183) for receiving an external DC power source (item 150 other DC source such as solar); a direct oxidation fuel cell system (item 120);

Art Unit: 2835

a rechargeable battery (item 141); a switching device (item 182) operable to select between, said DC power source, said fuel cell system and said rechargeable battery such that power is continuously applied to said battery powered electronic application device; and a modular interface (in figure 2 it may be seen that the apparatus of Christensen is both portable and having modular connections to the switching circuit item 182 in figure 1) having a plurality of interfaces for receiving power connectors that couple the powering unit to an application device. While Christensen does not teach an input for receiving AC power from an external source Colborn teaches a similar system which has an input for receiving AC external power Colborn also teaches a fuel cell being direct oxidation (column 3 lines 10-20) and Colborn also teaches the use of a battery which is rechargeable. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Christensen to include a input for receiving AC power as seen in Colborn in order allow the device to be plugged into wall socket better assure continuous power.

The examiner maintains Christensen's system is portable based on a review of drawing of figure 2 showing the modular nature of system if it is maintained by applicant Christensen does not teach the system is portable. Applicant is then referred to *In re Lindberg*, 93 USPQ 23 (CCPA 1952) for teaching of making an old device portable or moveable without producing any new and unexpected results involve only routine skill in the art

With respect to claim 18 Christensen teaches the DC power source may be from a whole host of other devices. While Christensen does not specifically call out an

Art Unit: 2835

automobile or vehicle DC power source. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a DC power source for a vehicle DC outlet, as the DC power source in order to use the device is an automobile.

With respect to claim 19 while Colborn is silent on the AC power being from any particular source It would have been obvious to one of ordinary skill in the art at the time of the invention to use either a an electrical outlet in a building or structure, a portable generator or a power grid as seen in Dailey for example as these are the most common sources of AC power.

With respect to claim 20 Christensen as modified by Colborn teaches loads are electrical devices and loads, which may be any type of equipment and which further may be mobile phones, personal digital assistants, mobile computers, mobile DVD players, and mobile video game systems. It would be obvious to one of ordinary skill in the art at the time of the invention to connect any desired load.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen (U.S. Pat. No. 6,703,722) in view of Colborn et al. (U.S. Pat. No. 6,787,259) as applied to claim 12 and 14 above, and further in view of Sainsbury et al. (U.S. Pat. No. 6,104,162). Christensen neither in combination or alone teach the battery can be removed and placed in an application device after it is charged. Sainsbury teaches the battery can be removed and placed in an application device after it is charged seen in figure 1. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Christensen and Colborn in view of Sainsbury in order to use the device under the power of the charged battery.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Christensen (U.S. Pat. No. 6,703,722) in view of Colborn et al. (U.S. Pat. No. 6,787,259) further in view of Dailey (U.S. Pat. No. 6,680,547) Christensen as modified by Colborn teach the device of claim 8 but are silent on the use of modular interface also includes inputs for producing signals of varying potentials that are available to power a number of different application devices. Dailey provides voltage conversion circuitry located between the load and supply. It would have obvious to one of ordinary skill in the art at the time of the invention to include circuitry to provide multiple output voltages to power loads requiring different voltages.

#### ***Allowable Subject Matter***

Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: Christensen (U.S. Pat. No. 6,703,722) in view of Colborn teach the device of claim 8 but do not teach fuel cell comprising a protonically conductive, electronically non-conductive membrane electrolyte having an anode aspect and a cathode aspect, and a catalyst coating being disposed on the anode and the cathode aspects such that when fuel is introduced to the anode aspect an anodic disassociation of the fuel into carbon dioxide protons and electrons occurs and a cathodic combination of protons, electrons and oxygen produces water whereby current

Art Unit: 2835

is produced from the electricity generating reactions to provide current to load associated with the fuel cell system. These further limitations to claim 8 are not taught or rendered obvious by the prior art.

Claims 3 and 10 are allowed. The following is an examiner's statement of reasons for allowance:

With respect to claim 3 the method steps and A, B and C are seen in Dailey however the further limitation of step H are not taught or rendered obvious by Dailey. This further limitation to claim 3 are not taught or rendered obvious by the prior art.

With respect to claim 10 the further limitation to claim 9 detailing the programming of the microprocessor and charging of the battery are not taught by Christensen or Colborn alone or in combination. This further limitation to claim 3 are not taught or rendered obvious by the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2835

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Leifer (U.S. Pat. No. 6,459,171) teaches a similar power system to supply and application device to that claimed in claim 1, 8 and 12


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Rutland-Wallis whose telephone number is 571-272-5921. The examiner can normally be reached on Monday-Thursday 7:30AM-6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2835

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MRW



**LYNN FEILD**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 4800**